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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,323	01/16/2004	Roger L. Poe	506419-0071	8368
27910	7590	10/14/2005	EXAMINER	
STINSON MORRISON HECKER LLP ATTN: PATENT GROUP 1201 WALNUT STREET, SUITE 2800 KANSAS CITY, MO 64106-2150			COCKS, JOSIAH C	
			ART UNIT	PAPER NUMBER
			3749	

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/759,323

Applicant(s)

POE ET AL.

Examiner

Josiah Cocks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on response filed 7/18/2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-105 is/are pending in the application.
- 4a) Of the above claim(s) 55-105 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. Receipt of applicant's amendment filed 7/18/2005 is acknowledged.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on 7/18/2005 disclaiming the terminal portion of any patent granted on this application that would extend beyond the expiration date of U.S. Patent No. 6,729,874 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4, and 6-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 38 11 477 (“‘477 patent”) (cited by applicant) in view of and U.S. Patent No. 4,457,704 to Sommers et al. (“Sommers”).

The ‘477 patent discloses a compound venturi structure and burner assembly similar to that described in applicant’s claims 1, 4, and 6-27. In particular, Brazier shows a burner assembly including a venturi cluster with at least six venturis (1, see Fig. 5) with bell shaped inlets (3), a collector (2) having an inlet end in fluid communication with the outlets of the venturis whereby fuel and induced air are intermixed to form a single stream. The ‘477 patent further discloses that the venturis are arranged as parallel tubes (see Fig. 3), and the collector (2) includes a burner tip (10) wherein the fuel and air mixture enters the combustion zone in an axial direction relative to the tip (see Fig. 5). The embodiment shown in Figures 3 and 4 illustrates a central fuel tube supplied to the collector (2) and burner tip (10).

The ‘477 patent possibly does not disclose the creation of an ultra-lean fuel mixture.

Sommers teaches a fluid fuel fired burner in the same field of endeavor as the ‘477 patent. In Sommers, the burner includes a central fuel supply tube and nozzle (see Fig. 1) and venturi mixing device (3). The fuel mixture created by the mixing device is super-stoichiometric (i.e. having excess air and thus fuel-lean), which desirably serves to reduce the NO<sub>x</sub> content of the combustion gases (see abstract and col. 3, lines 31-46)

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Therefore, in regard to claims 1,4, and 6-27, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the burner of the '477 patent to incorporate producing a fuel lean mixture as taught by Sommers to desirably reduce the NOx content of the burner waste gas (see Sommers, col. 3, lines 31-36).

6. Claims 2, 3, 5, and 28-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over the '477 patent in view of Sommers as applied to claim 1 and 21 above, and further in view of U.S. Patent No. 2,618,325 to Seitz ("Seitz") (cited by applicant) and U.S. Patent No. 3,850,571 to Zink et al. ("Zink") (cited by applicant).

The '477 patent in view of Sommers teach all the limitations of claims 2, 3, 5, and 28-54 except for the specific structure of the burner tip and relation to a central fuel tube.

Seitz and Zink et al. each teach a burner apparatus in the same field of endeavor as the '477 patent. Each reference includes a burner tip, wherein a central fuel tube extends through the tip and the tip may be adjusted to produce flames of varying shapes and characteristics, such as round and flat (see Seitz, Figs. 11 and 12) or cylindrical (see Zink et al., Figs. 8-10).

Therefore, in regard to claims 2, 3, 5, and 28-54, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the burner of the '477 patent to incorporate the burner tips of Seitz and Zink et al. for the purpose of obtaining flames shapes of desired stability, length, and diameter based on desired application (see Seitz, col. 1, line 38 through col. 2, line 35 and Zink et al., col. 1, lines 10-55).

***Response to Arguments***

7. Applicant's arguments with respect to claims 1-54 have been considered but are moot in view of the new ground(s) of rejection. Applicant argued that the examiner's interpretation of the term "sub-stoichiometric" was in error as such a term is not understood in the art to suggest a mixture being fuel lean. The examiner agrees that this term is not properly construed in the manner previously asserted by the examiner. However, as noted above, the claims are now rejected based in part on the teachings of the newly applied reference to Sommers.

***Conclusion***

8. As the claims are now rejected over a reference (Sommers) that was not previously applied, this action is made non-final. A THREE (3) MONTH shortened statutory period for reply has been set. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

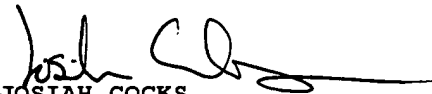
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Josiah Cocks whose telephone number is (571) 272-4874. The examiner can normally be reached on weekdays from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Carter, can be reached at (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair>. Any questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).

jcc  
October 5, 2005

  
JOSIAH COCKS  
PRIMARY EXAMINER  
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